

FURTHER NOTES ON AUSTRALIAN COLEOPTERA, WITH
 DESCRIPTIONS OF NEW GENERA AND SPECIES.
 NO. XXXVIII.

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CARABIDÆ.

LITHOSTROTUS.

Mr. Sloane, in a note to his tabulation of Australian *Lebiid* genera (Pr. Linn. Soc., N.S.W., 1898, p. 494), suppresses his *Lestianthus* as a synonym of *Lithostrotus*, but without any discussion, nor can I find that he has entered into the matter elsewhere. I cannot now remember whether I have held communication with him on the matter privately, but in any case I think his decision may be accepted, although there are slight differences between his diagnosis and mine which might suggest a doubt on the subject. It seems clear that his species (*L. sculpturatus*) is not identical with my *L. cærulescens*. I have recently met with an example of *Lithostrotus* which does not seem referable to either of the above species, and which therefore must be regarded as a third member of the genus.

L. planior, sp. nov. Minus elongatus, minus convexus; capite quam prothorax parum angustiori; sat nitidus: læte cyaneus, antennis palpis tibiisque rufescentibus; supra pilis erectis sparsim vestitus; capite prothoraceque supra minus fortiter minus sparsim punctulatis; hoc leviter transverso, canaliculato, sat anguste marginato, cordiformi, antice subtruncato, angulis posticis acutis denticulatis; elytris minus fortiter striatis; striis (his postice sat obsoletis) confertim subtiliter punctulatis, interstitiis planis sat latis uniseriatim sat fortiter sparsius punctulatis. Long., $2\frac{2}{3}$ l.; lat., 1 l. (vix.).

Differs from *L. cærulescens*, Blackb., *inter alia*, by its distinctly less convex form, by its considerably brighter cyaneous colouring, by its head less coarsely and less sparsely punctulate, and by the sculpture of its elytra, which are distinctly striate with the striæ very distinctly, finely, and closely punctulate, the interstices being flat and even, and each bearing a single row of about 10 or 12 strong punctures (much larger than those of the striæ). This species is probably more nearly allied to Mr. Sloane's species than to *L. cærulescens*, but is not likely (on account of several disagreements with the description) to be identical with it, e.g., Mr.

Sloane describes the elytral interstices of his *sculpturatus* as "closely punctulate," which *per se* seems to settle the matter.

New South Wales: Blue Mountains; elevation, 3,000 ft.

LAMELLICORNES.

SERICOIDES.

PLATYDESMUS.

P. (Haplonycha) obscuricornis, Blanch. I have recently met with a *Platydesmus* on the Blue Mountains (New South Wales), which, I feel no doubt, is the true *P. (Haplonycha) obscuricornis*, Blanch. I used the name, with hesitation, in a former paper (Tr. R.S., S.A., 1907, p. 270) for a species of the genus which is closely allied to this Blue Mountain one, but certainly not identical. The present insect is larger, and has its antennal flabellum black or very dark piceous (in both these characters agreeing with Blanchard's description), also has the antennal flabellum of the male longer, the head more closely and less coarsely punctured, and the puncturation of the pronotum distinctly stronger and closer, and the basal joint of the hind tarsi considerably shorter in proportion to the 2nd joint. This discovery leaves the *P. obscuricornis* of my former paper without a name, and accordingly I name and describe it as follows:—

P. punctulaticeps, sp. nov. Mas. Leviter ovatus; sat nitidus; supra subglaber, lateribus ciliatis; subtus pilosus; subiridescens, colore variabilis (ferrugineus, plus minusve picescens); antennis 9-articulatis, rufis, flabello 3-articulato minus elongato (quam clypeus parum longiori) haud arcuato: capite minus crebre minus subtiliter punctulato; prothorace quam longiori ut 13 ad 8 latiori, antice fortiter angustato, supra subtilius minus crebre punctulato, lateribus leviter arcuatis pone medium nonnihil sinuatis, angulis anticis acutis posticis (superne visis) subrectis, basi marginata utrinque sinuata; scutello fere lævi; elytris sat fortiter punctulato-striatis, striis haud geminatim ordinatis, interstitiis sat fortiter convexis sparsim punctulatis; pygidio subtilius minus crebre punctulato; tibiis anticis extus tridentatis (dentibus 2 inferioribus magnis, altero subobsoleto); tarsorum posticorum articulo basali 2° æquali; coxis posticis quam metasternum multo brevioribus.

Feminæ antennarum flabello quam clypeus multo breviori.

The relation of this species to *P. obscuricornis*, Blanch., has been discussed above, under the name of that insect.

New South Wales: Sydney.

The tabulated statement of the distinctive characters of the known *Platydesmi* must now be altered as follows:—

- | | | |
|---|--------|-------------------------------|
| A. Antennal flabellum piceous-black | ... | obscuricornis, <i>Blanch.</i> |
| A.A. Antennal flabellum red or testaceous. | | |
| B. Antennal flabellum has only three laminæ. | | |
| C. Basal 2 joints of hind tarsi scarcely differing in length. | | |
| D. Pronotum coarsely punctulate | | sulcipennis, <i>Macl.</i> |
| DD. Pronotum finely punctulate | | punctulaticeps, |
| CC. Basal joint of hind tarsi notably shorter than 2nd joint. | | [<i>Blackb.</i> |
| D. Prothorax fully twice as wide as long | | major, <i>Blackb.</i> |
| DD. Prothorax notably less transverse | | inamœnus, <i>Blackb.</i> |
| BB. Antennal flabellum has four laminæ | | inusitatus, <i>Blackb.</i> |

In a paper which I had the honour of reading before the Royal Society (South Australia) last year I continued my revision of the Australian *Sericoid Lamellicornes* by treating of the group of genera of which *Scitala* may be regarded as the typical member, and also of several aberrant genera which appear to me to follow that group more naturally than to occupy any other place in the aggregate. They complete that portion of the aggregate which consists of winged species having simple claws. In a former paper (*Trans. R.S., S.A., 1898, p. 32, etc.*) I furnished a tabular statement of the characters of the Australian *Sericoides*, in which I placed at the end of the table seven genera differing from all those preceding them in respect of certain strongly marked characters, inasmuch as they present one or more of the following peculiarities, *viz.*, absence of wings suitable for flight, claws not simple, and prosternal sutures open. The genus distinguished by the lastnamed character (*Mæchidius*) I have since regarded as better placed before the other six of those genera than as the last of the seven, and accordingly I placed it in my present revision as the last of the genera discussed in my paper of 1907. There now remain, therefore, only the genera having claws not simple, which are the "other six" referred to above, and also another genus (*Anacheirotus*) founded by me subsequently (*Tr. R.S., S.A., 1900, p. 39*) for a very remarkable *Lamellicorn* taken by Herr Koch in Central Australia, and Macleay's genus *Odontotonyx*. The first of these genera (*Callabonica*) calls for some special remark, since I characterized its claws originally (in 1895) as appendiculate, but in 1898 placed it among genera with simple claws, accidentally omitting to add a note setting forth the reasons for the change. The fact is its claws are intermediate in form, and should be called, I think, "subappendiculate."

Their basal part is compressed (and wide on its broader face) and becomes somewhat suddenly narrower a little before the middle (more conspicuously in the front than in the hind claws), but without the sharp distinction between the basal and apical parts that constitutes true appendiculation. In the strict sense, therefore, they must be called simple. *Anacheirotus* was sufficiently discussed by me in a former paper (*loc. cit.*), and I need not repeat what I then wrote, but it will be well to furnish a fresh tabular statement of the characters distinctive of the *Sericoid* genera still remaining for treatment in this revision, inasmuch as one of them had not been discovered when my former tabulation was written, and I have been able to identify in the Australian Museum another genus (*Odontotonyx*) which in my former revision I was obliged to pass over as unrecognizable.

- A. Claws (strictly regarded) simple; membranous wings aborted Callabonica.
- AA. Claws appendiculate or bifid.
- B. Body without membranous wings ... Pseudoheteronyx.
- BB. Winged species.
- C. Antennæ with only 7 joints Nepytis.
- CC. Antennæ with more than 7 joints.
- D. Anterior 4 tarsi of male strongly dilated Neoheteronyx.
- DD. Tarsi of male normal.
- E. Tarsi with a large membranous appendage at base of claws ... Odontotonyx.
- EE. Tarsi not as E.
- F. Form strongly depressed ... Eurychelus.
- FF. Form notably more convex.
- G. Labrum extremely small and inconspicuous Anacheirotus.
- GG. Labrum strongly developed Heteronyx.

The known species pertaining to the 8 genera tabulated above are very unevenly distributed, the first 7 genera together containing less than 12 species, while *Heteronyx* is of all the Australian *Lamellicornes* the richest in known species.

CALLABONICA.

The generic characters have been discussed above under the heading "*Sericoides*." I have not seen any additional specimens referable to *Callabonica* since my original description was written.

PSEUDOHETERONYX.

I have two new species to be added to this genus. The now known species may be distinguished as follows:—

- A. Antennæ of only 8 joints.
- B. Elytra sparsely punctulate (about 12 punctures from suture reach middle of width) *baldiensis*, *Blackb.*

- BB. Elytra closely punctulate (12 punctures from suture not nearly reaching middle of width) creber, *Blackb.*
 AA. Antennæ of 9 joints.
 B. Prothorax twice as wide as long laticollis, *Blackb.*
 BB. Prothorax decidedly less transverse helæoides, *Blackb.*

P. creber, sp. nov. Sat brevis; fortiter convexus; postice dilatatus; minus nitidus; supra sat glaber, subtus et in pedibus pilis fulvis minus sparsim vestitus; niger, antennis palpis tarsisque picescentibus; clypeo crebre ruguloso, antice sinuato-truncato; fronte leviter vix crebre punctulata; prothorace quam longiori fere duplo latiori, antice leviter angustato, supra fortiter crebre punctulato (in parte postico-laterali confluentem subtiliter ruguloso), angulis posticis rotundato-obtusis, lateribus leviter arcuatis, basi media parum lobata; elytris ut prothoracis discus punctulatis, haud striatis; pygidio sparsim punctulato; tibiis anticis extus fortiter 3-dentatis; labro a clypeo obtecto; antennis 8-articulatis; coxis posticis metasterno (hoc sat brevi) longitudine sat æqualibus, quam segmentum ventrale secundum sat longioribus; unguiculis appendiculatis. Long., $6\frac{1}{4}$ l.; lat., $3\frac{1}{2}$ l.

This species is a little more elongate than its previously described congeners, with the metasternum slightly longer. As my specimen is unique I have not been able to examine its concealed parts, but I have no doubt of its wings being obsolete. There are considerably more than 20 punctures down the length of its pronotum, and something like 35 across the width of an elytron.

New South Wales (Mount Kosciusko); taken by Mr. H. J. Carter.

P. laticollis, sp. nov. Brevis; fortiter convexus; modice nitidus; supra fere glaber pilis erectis fulvis sparsissime vestitus; subtus et in pedibus pilis fulvis nonnullis vestitus; niger, antennis palpis tarsisque picescentibus; clypeo crebre ruguloso, antice (superne viso) truncato; fronte minus crebre punctulata; prothorace quam longiori plene duplo latiori, antice leviter angustato supra sparsim acervatim subgrosse vix profunde punctulato, angulis posticis (superne visis) bene determinatis fere rectis; lateribus leviter arcuatis, basi parum lobata; elytris vix manifeste striatis, sparsim sat grosse punctulatis; pygidio sparsissime punctulato; tibiis anticis extus fortiter 3-dentatis; labro a clypeo obtecto; antennis 9-articulatis; coxis posticis metasterno (hoc brevi) longitudine sat æqualibus, quam segmentum ventrale secundum sat longioribus; unguiculis appendiculatis. Long., 6 l.; lat., $3\frac{3}{4}$ l.

Somewhat close to *P. helæoides*, Blackb.; its clypeus viewed from directly above is seen to be truncate (that of *P. helæoides* sinuate or subemarginate); its prothorax is by measurement fully twice as wide as long (that of *P. helæoides* decidedly less transverse); the hind angles of its prothorax viewed from above are quite sharp and almost rectangular (those of *P. helæoides* decidedly blunt); its elytra are all but non-striate, very faint striæ being traceable only from a particular point of view, and there can hardly be said to be distinct continuous interstices between the striæ from any point of view; in *helæoides* 10 distinct striæ are seen, with quite strongly convex interstices—the striæ, however, being rather depressions between ridges than furrows actually impressed on the derm of the elytra, and both striæ and interstices are rendered irregular in places by the foveate rugulosity of the sculpture. In *P. laticollis* about 10 punctures reach from base to apex of pronotum and about 12 from suture to lateral margin of elytra.

New South Wales; taken at Walgett by Judge Docker; sent to me by Mr. Carter.

NEPYTIS.

As I am not quite sure that I have seen the unique species that represents this genus, I cannot make any confident assertion about its generic validity. I found in Tasmania some years ago a dead and much broken *Lamellicorn* which I believe to be the species in question, but, unfortunately, it is without antennæ, and this particular mutilation renders the specimen incapable of certain identification, as the most distinctive character attributed to the genus is that its antennæ have only 7 joints. I do not regard that character alone as sufficient for separation from *Heteronyx*, although I have not as yet seen any *Heteronyx* with so few antennal joints, but if the specimen referred to above is really *Nepytis*, there are other distinctive characters that establish the validity of the genus. In view of the uncertainty of the identification it is, however, not worth while to go further into the matter here.

NEOHETERONYX.

The 4 anterior tarsi of the male in the unique known species of this genus are most remarkable, resembling those of a *Harpalus*. I have nothing to be added here to my former notes concerning it.

ODONTOTONYX.

This genus is readily distinguished among those having the claws not simple by the large membranous appendage

at the base of the claws. The unique species has elytra nitid, glabrous, and strongly striate.

EURYCHELUS.

I doubt whether this genus can be permanently retained as distinct from *Heteronyx*. There does not appear to me to be any better character for it than its depressed parallel form and the occurrence on its elytra of a fairly distinct pattern, due to the presence of small patches of whitish pubescence, the derm beneath the patches being also usually of a lighter colour than the general surface. Regarded as a *Heteronyx* the described species (*E. marmoratus*, Blanch.) finds its place in the 1st Group (*vide* my tabulation, to follow), and it stands next to *H. Bovilli*, Blackb., differing from it *inter alia multa* by the very much closer puncturation of its dorsal surface. I have examined a large number of specimens of *Eurychelus* from various localities in New South Wales and Victoria (all of them, I believe, in mountainous regions), and am unable to regard them as representing more than one species, which, however, seems to be variable in several respects, especially size (long., $3\frac{3}{4}$ - $5\frac{1}{2}$ l.) and colouring, the usual colour being ferruginous marbled with slightly lighter patches bearing short whitish hairs. In many specimens the disc of the pronotum is blackish. In the most highly coloured example before me the elytra are piceous, with most of the suture as well as the paler blotches very conspicuously testaceous, and the legs bright ferruginous. Some examples from Mount Kosciusko (sent by Mr. Carter) are darker than the usual type—one of them with black elytra—and the marbling of the elytra is more or less obsolete. The sculpture scarcely varies—only, I think, to the extent of the pronotum being a little less closely punctured in some specimens than others, but the varieties are found in company with each other, and are very likely to be the sexes.

ANACHEIROTUS.

I have not seen any more species or specimens of this genus since I characterized it eight years ago. It is probably found only in the dry central regions of Australia which are seldom visited by entomologists. The validity of the genus will probably stand permanently, for it is scarcely likely that intermediate forms will be found linking the small inconspicuous labrum of *Anacheirotus* with the large prominent labrum of a typical *Heteronyx*.

HETERONYX.

This genus might reasonably claim to be the most perplexing to the student in the whole range of the Australian

Coleoptera, its hundreds of species being all of them obscure insects of uninteresting appearance, closely allied *inter se*, almost devoid of reliable distinctive colouring, and burdened with numerous names attached by the earlier authors to descriptions that are practically useless. I wrote a revision of the genus as then known to me in Proc. Linn. Soc., N.S.W. (1888 and 1889), but that work now stands in need of being superseded by a new revision, owing to the large number of additional species that have found a place in collections during recent years, most of which are as yet undescribed. The paper of which I now offer the first portion is an attempt to meet that want, and will complete the series of papers on the Australian *Sericoides* which I have laid before the Royal Society of South Australia during the last three years.

In my former revision of *Heteronyx* (founded by M. Guérin-Méneville, 1830) I entered somewhat fully into the history and synonymy of the genus. Subsequent investigation has not materially affected the conclusions set forth in that paper, although it has added information of certain generic forms that have since been characterized, and has yielded additional information about synonymy. The statement that I did not know any Australian *Sericoides* except *Heteronyx* having in combination elytra of normal length, antennæ of 8 or 9 joints, and claws not simple cannot, of course, now be repeated in the present tense, inasmuch as I have since formed 3 new genera (*Pseudoheteronyx*, *Neoheteronyx*, and *Anacheirotus*) having those characters, for certain species that have come into my hands since I made the statement referred to. Moreover, a recent examination of the collection of Mr. W. S. Macleay, in the Macleay Museum at Sydney, points to the probability of the name *Cotidia* being a synonym of *Heteronyx* (*vide* Tr. R.S., S.A., 1907, p. 244). I have already in this paper pointed out that the genus *Callabonica* was erroneously placed by me (*vide* Tr. R.S., S.A., 1895, p. 36) beside *Heteronyx*. With these qualifications the general remarks on the characters and synonymy of *Heteronyx* (which, however, did not include reference to *Callabonica*, a name of later date) in my former revision of the genus do not appear to me to need alteration. For the characters of the recently added genera (mentioned above) it is easy to refer to their diagnoses in former volumes of our Transactions, and their relation to *Heteronyx* is indicated also in tabular form in Tr. R.S., S.A., 1898, p. 34, and 1900, p. 40. It will be convenient here to recapitulate briefly the conclusions in respect of synonymy set forth in my former revision, but it is unneces-

sary to burden this paper with a repetition of the reasons already stated which led me to those conclusions. I expressed the opinion that the generic names which I can ascertain to have been regarded by Lacordaire and other authors as synonyms of *Heteronyx* ought to be treated as follows:—

Caulobius and *Haploopsis* as distinct valid Australian genera.

Homalopia and *Philochlænia* as not occurring in Australia at all (the species which Lacordaire rightly regarded as incorrectly referred to them are not *Heteronyces*, as he took them to be).

Sericesthis as a valid distinct genus, though possibly one or two of the species Boisduval referred to it may have been *Heteronyces*.

Silopa and *Hostilina* as synonyms of *Heteronyx*.

Melolontha as not occurring in Australia, although the name was applied by early authors to some species of *Heteronyx*.

Cotidia (referred to above) also seems to be probably a synonym of *Heteronyx*.

I pass now to some general remarks on the grouping of the *Heteronyces* in aggregates. I have failed to find any character that will avail for this purpose so as to produce "natural" groups, *i.e.*, groups the members of which can be rightly regarded as on the whole more nearly allied to each other than they are to the members of other groups. Whether the structure of the antennæ, or of the labrum and clypeus, or of the claws, or of the coxæ (in all of which organs the diversity of form is very great and extremely interesting) be taken as the basis of classification, the result is always that species closely agreeing in facies are widely separated, and if the species resembling each other in facies be grouped together, each of the groups so formed is found to contain the widest possible diversity of structure in almost every organ of the body. I therefore arrive at the conclusion that, to me at any rate, the grouping of the *Heteronyces* must be a mere matter of convenience for the purpose of identification, and consequently I content myself with the effort to place the species in aggregates which will serve best to that end. This view of the matter is similar to that which I expressed in my former series of papers on the genus, and in the main my recent study of the subject, founded on a vastly increased quantity of material, has confirmed in my judgment the conclusions I then set forth as to the method that it is best to follow in forming these artificial groups. I have found, however, that one important modification of my former scheme is

desirable. While still convinced that the character lending itself best to the formation of primary groups and doing least violence to natural affinities is the relation of the labrum to the clypeus, I have found that it is undesirable to retain the second of the three primary groups for which I employed it in my former series of papers, and which was characterized as having the relation to each other of the labrum and clypeus intermediate between their relation in the other two groups. The first essential in the artificial grouping of an extensive series of species is to form the primary aggregates in such fashion that there can be no doubt at all in distributing the species among them. In my former classification I divided the species into those having the labrum entirely below the level of the clypeus, those having the summit of the labrum on a level with the clypeus, and those having the clypeus below the level of the summit of the labrum. Working through the long series of undescribed species now in my hands, I have found that the transition of the position of the summit of the labrum is very gradual, so that in not a few species that would have to be placed in the intermediate group the relation of the labrum to the clypeus would differ very little indeed from its relation in species that would fall into one or other of the other two groups. I therefore propose to abolish the second primary group altogether, and to distribute its species between what I formerly called the first and the third groups, expressing, however, the characters that distinguish those groups (now the first and second) in altered terms, for the comprehension of which a little explanation is necessary. In a very large majority of the *Heteronyces* (including the whole of the group formerly called the third) the relation of the labrum to the clypeus is such that if the head be looked at somewhat obliquely from behind, the middle part of the free outline of the head is the labrum, and that that part is a convex curve distinct from the curve of the clypeus on either side of it, so that the free outline of the head appears trilobed, or at least trisinuate. There is the greatest possible specific diversity in the nature of this outline in other respects—the middle lobe or arch (*i.e.*, the labrum) varying from being much more than a third of the whole free outline, to being little more than a narrow inequality in the curve of the free outline (in some instances conspicuous only from certain points of view), and from being but little projected forward (so that the summits of the clypeal curves reach forward considerably more than it does) to being a conspicuous proboscis-like lamina protruding from the front of the head; but in all the species which I group together by this character there

is the invariable threefold convexity of the free outline of the head when that segment is looked at from the required point of view (more or less obliquely from behind). In the other primary group of *Heteronyces* this threefold convexity of the free outline of the head (which I call in the following pages the "trilobed outline") is altogether wanting. In the majority of its species the whole labrum is much below the level of the clypeus, so that the whole free outline of the head is clypeus (as in *Scitala* and most other *Sericoid* genera), while in some species the labrum (the head being regarded obliquely from behind) is visible in a deep emargination of the clypeus where its outline appears as a *concave* curve; in some species the ends of the labrum only are visible projecting from the outline as two more or less conspicuous processes, and in some the clypeus has a deep angular cleft in which the labrum is not any part of the outline from any point of view that looks obliquely at the head from behind; but always the free outline of the head has no appearance of threefold convexity. When the *Heteronyces* are thus divided into primary groups there are scarcely any species at all about whose location there can be the slightest doubt. The only instances known to me are those of a few small species in each group in which from a certain point of view the outline is in a sense trilobed, but the middle lobe (the labrum) from that point of view presents a truncate apex. In two or three of these species the trilobed appearance is caused merely by the labrum being projected so far forward without overtopping the front margin of the clypeus that it comes into view. These species belong to the first group. In the other species referred to the labrum overtops the front margin of the clypeus, and the truncate appearance of its apex when viewed obliquely from behind is due to an exceptional structure of the labrum itself, and consequently these insects stand in the second group. It may here be noted that the first group contains no species in which the labrum overtops the front margin of the clypeus. For the sake of brevity in tabulating I call the lobes of the trilobed outline simply "middle lobe" and "lateral lobes," omitting the words "of the trilobed outline," and also in comparing the width of the lobes omit the words "in width" (*e.g.*, "middle lobe more than $\frac{1}{2}$ lateral lobes," meaning that it is more than $\frac{1}{2}$ as wide as each lateral lobe).

For the formation of secondary groups I take the number of joints in the antennæ—a character which does not call for any further remark. Finally, I divide each of the aggregates resulting from the use of the two characters already mentioned into two groups, according as the claws of

the hind tarsi are bifid or appendiculate, and on this division it will be necessary to furnish some notes, inasmuch as there is wide diversity in the form of the claws which I call bifid, and it is not difficult to arrange a series of *Heteronyces* in such fashion that the appendiculate form seems to pass very gradually to the bifid, requiring a definite statement (if the terms are to be of value for identification of species) of exactly what is covered by each term. If a species with typically appendiculate claws be examined it will be seen that each hind claw consists of two pieces—a basal compressed piece (which approximates in form to a parallelogram) and a much more slender apical piece attached to the external apex of the basal piece. Transition from that typically appendiculate build of claw to the bifid may be said to begin by a tendency of the inner apex of the basal piece to be prolonged more or less at an angle to the axis of the basal piece, and that tendency becomes gradually in successive species more pronounced until the prolongation becomes a well-defined sharp process not much less than half the size of the whole apical piece. When the point is reached of the prolongation being more than a trifling prominence of the inner apex of the basal piece (say, less than a quarter of the projection of the apical piece) I call the claw bifid, as it then seems to end in two processes not very greatly different in size. A variation of this latter form is found in some species where the apical piece itself is extremely small and the inner apex of the basal piece is produced like a triangular tooth scarcely at all smaller than the whole apical piece. Next we find a form in which the claw appears to consist of a single piece ending in a sharp slender curved process and having a tooth-like process projecting from its inner margin at a greater or less distance from the base, and finally the genuinely bifid form is reached where the apex of the claw is seen to be split into two somewhat equal portions—usually both small. Thus it will be seen that, in the following pages, an appendiculate claw is taken to be one having a basal compressed piece of which the apex is more or less truncate, and the inner apical angle not or very little projected, and a slender piece attached to the external apical angle of the basal piece, and that all other claw structure is regarded as bifid. It should be noted that in many species of *Heteronyx* the claws when appendiculate look from some points of view as if they were simple, and therefore require to be examined carefully.

The shape of the labrum calls for close attention in discriminating the species of *Heteronyx*. This organ presents—I think in all the species—the common character of being so formed that its dorsal surface may be regarded

as two planes meeting each other, one of which (I call it the lower plane) is inclined from the line of junction with the other (which I call the upper plane) hindward and downward (the insect being laid on its back) towards meeting the labium; the upper plane is inclined from the line of junction upward or horizontally towards the front edge of the clypeus. But outside this common feature of the labrum there is the greatest possible diversity. In some species the upper and lower planes meet at an angle, the line of junction in some species even being defined by a fine transverse carina; while in others the two planes meet in a rounded manner. In some species the upper plane is horizontal, in others perpendicular, or inclined in diverse ways to the horizontal. In some species the labrum is entirely below the level of the clypeus, in others it overtops the clypeus. In some species having the labrum entirely below the clypeus, but more or less perpendicular, it appears when viewed from the front as an arch of uniform height, in others as an arch much more strongly curved on the upper than the lower edge, in others as a triangle, and in others again as an elongate erect lamina.

The puncturation of the various segments of the body is, of course, a character of great importance in distinguishing the species of this genus—but it is obviously difficult to express in terms that lend themselves to a tabular statement where the difference in puncturation is not very great. In the following pages I have in some cases endeavoured to meet that difficulty by counting the number of punctures occupying a given space, and I have also made use of a difference that is easily traceable in the type of puncturation on the elytra. In many species the punctures are isolated round holes, normally impressed on the surface, while in others they appear as impressions of more or less triangular form, more deeply sunk at the base than at the apex, with the result that if the elytra be viewed obliquely from behind the front limit of the punctures seems to be raised in a granuliform manner. The term "squamosé" has been commonly applied to that latter style of sculpture from its causing a more or less scale-like appearance from some points of view, and I have made use of the term in the following pages. It is desirable, however, to remark that I limit the term to those elytra in which the *prevailing* character of the sculpture is squamosé; there are some species in which the general puncturation is distinctly of the non-squamosé type, but on which, nevertheless, when they are viewed obliquely from behind a few granules can be seen—usually about the base and suture. It is perhaps well to note here that where a

number of punctures is mentioned as occupying a given distance, the meaning is that that number of punctures averagely spaced *would* occupy that distance if they ran regularly in line. Thus the statement that about ten punctures from the apex reach to the middle of pronotum means that the punctures are so spaced that if ten of them averagely spaced were placed on a straight line down the middle of the pronotum they would reach to about the middle of the segment; as a fact, the punctures very seldom do run in straight lines, and where the puncturation is sparse a right line down the middle of the pronotum might actually touch very few of the punctures, passing between most of them.

This expedient of indicating specific characters by counting the punctures is, of course, available only in the case of the difference of puncturation being considerable, and, moreover, does not serve for notifying the relative *fineness* or otherwise of the punctures. It is, however, essential, if the distinctive characters of a great number of species such as compose *Heteronyx* are to be intelligently cast into a tabular form, that no character be passed over which can by any means be indicated with definite clearness, and therefore I have adopted the expedient of selecting certain species as standard species with which others may be compared, choosing those which are the most widely distributed and the most easily identified. There are three *Heteronyces* which from their distribution might be confidently expected to be present in any collection including a fair number of species from New South Wales, Victoria, South Australia, and Western Australia, all of which can be named without much difficulty—at any rate, can be identified with the insects to which I in this revision apply the names. *H. obesus*, Burm., is found in all the places named above, and has no very close ally known to me. *H. jubatus*, Blackb., is a common species in New South Wales, Victoria, and South Australia, and is easily identified by the characters given in my former revision (Proc. Linn. Soc., N.S.W., 1889, p. 662) or in the tabulation to follow in this present revision, and, moreover, its only near allies (*H. fallax*, Blackb., and *H. striatipennis*, Blanch.) have elytra similarly punctured. *H. elongatus*, Blanch., is common in New South Wales, and is at once identified among its nearer allies by the conspicuous pencil of long fine setæ at the inner apex of each elytron. I shall not hesitate, therefore, to indicate distinctions of puncturation by comparison with those species. For the sake of brevity I shall not hold it necessary to quote the authors' names when I have occasion to refer to those species.

It is, perhaps, well to specify that the ventral segment, which in this memoir I call the "first" or "basal," is that which is (except in a very few species) partially overlapped by the hind coxæ, and that consequently the "second" ventral segment is the first which is entirely free of the hind coxæ. These are the first and second that are visible on the middle line.

I now pass to the discussion of the species of *Heteronyx*, which I divide into 8 groups, as follow:—

- A. Front outline of head (viewed obliquely from behind) not presenting a threefold convexity.
 - B. Antennæ consisting of only 8 joints.
 - C. Claws bifid Group I.
 - CC. Claws appendiculate Group II.
 - BB. Antennæ consisting of 9 joints.
 - C. Claws bifid Group III.
 - CC. Claws appendiculate Group IV.
- AA. Front outline of head (viewed obliquely from behind) presenting a threefold convexity.
 - B. Antennæ consisting of only 8 joints.
 - C. Claws bifid Group V.
 - CC. Claws appendiculate Group VI.
 - BB. Antennæ consisting of 9 joints.
 - C. Claws bifid Group VII.
 - CC. Claws appendiculate Group VIII.

Some of the above groups lend themselves to further division into subgroups, which will be found characterized under the headings of the several groups. In the present paper I am able to deal with only the species of the first two groups, but I hope to offer a paper to the Society next year completing this revision of the genus.

It is well to add the note that I am unable to specify any satisfactory character by which the sex of a *Heteronyx* can be confidently determined. The ventral segments in the male form a flat surface, so that their outline viewed from the side appears as a straight line. That outline is convex, I think, only in females. In some species the basal joint of the hind tarsi shows slight sexual distinctions, but so slight as to be valueless for description.

Group I.

The *Heteronyces* of this group are comparatively few in number, and they are all rare in collections. I have before me more than one specimen of only three species, and more than two specimens of only one species. I cannot associate with this group any of the names given by the earlier authors except Blanchard's name *rubescens*, and I should not have ventured on that identification if I had not been assisted by the possession of specimens from the original locality (Kan-

garoo Island). Blanchard, unfortunately, does not describe the claws of any of his *Heteronyces*. *H. rubescens*, in my former revision, was placed in the "intermediate" (now abolished) main division of the genus, on account of its labrum being slightly visible as part of the free outline of the head, but appearing (when so seen) concave, and not rising to the level of the clypeus. The following tabulation shows the distinctive characters of the species of this group:—

- | | |
|---|-----------------------------|
| A. Lateral gutter of pronotum distinctly expanded and flattened out close to front margin. | |
| B. Hind projection of hind claws much smaller than the whole apical piece. | |
| C. Hind projection of hind claws much nearer to apex of claw than to base of claw. | |
| D. Elytra not or scarcely granulate. | |
| E. Punctures of elytra well defined and isolated. | |
| F. Elytral punctures somewhat close (many more than 17 across an elytron). | |
| G. Basal edging of pronotum conspicuously thickened and raised at its ends ... | fulvohirtus, <i>Blackb.</i> |
| GG. Basal edging of pronotum uniform or nearly so | litigiosus, <i>Blackb.</i> |
| FF. Elytral punctures very few (about 17 across an elytron) | rudis, <i>Blackb.</i> |
| EE. Punctures of elytra indistinct (in antero-lateral part lost in subconfluent rugulosity) ... | dispar, <i>Blackb.</i> |
| DD. Elytra uniformly and conspicuously granulate ... | rubescens, <i>Blanch.</i> |
| CC. Hind projection of hind claws scarcely nearer to apex of claw than to base of claw ... | Tepperi, <i>Blackb.</i> |
| BB. Hind projection of hind claws not or scarcely smaller than the whole apical piece. | |
| C. Middle part of summit of labrum projects from perpendicular front of clypeus. | |
| D. Elytra non-striate outside sub-sutural stria. | |
| E. Elytra granulate. | |
| F. Prothorax very little narrowed in front ... | squalidus, <i>Blackb.</i> |
| FF. Prothorax much narrowed in front ... | Doddi, <i>Blackb.</i> |
| E. Elytra not granulate ... | Bovilli, <i>Blackb.</i> |
| DD. Elytra with 6 or 7 quite distinct striæ ... | anomalus, <i>Blackb.</i> |
| CC. Middle part of summit of labrum closely applied to perpendicular front of clypeus ... | labralis, <i>Blackb.</i> |
| AA. Lateral gutter not expanded in front | advena, <i>Blackb.</i> |

H. litigiosus, sp. nov. Sat elongatus, postice parum dilatatus; sat nitidus; brunneus, antennis palpisque testaceis; pilis cinereis brevibus minus dense vestitus; clypeo confluentem ruguloso, antice (minus leviter) emarginato; labro summo clypei planum nullo modo attingenti; fronte sat grosse nec crebre punctulata, fronte clypeoque planum sat æqualem efficientibus; antennis 8-articulatis; prothorace quam longiori ut 11 ad 6 latiori, antice modice angustato, supra fortiter nec crebre punctulato (puncturis circiter 14 in segmenti longitudine), lateribus leviter arcuatis, angulis anticis acutis minus productis posticis (superne visis) acutis retrorsum directis, basi fortiter bisinuata, margine basali æqualiter elevato; elytris concinne sat fortiter punctulatis (trans elytron puncturis circiter 25); pygidio sparsim sat grosse nec profunde punctulato: coxis posticis quam metasternum sat brevioribus, quam segmentum ventrale 2^{um} sat longioribus; tibiis anticis extus fortiter tridentatis; tarsorum posteriorum articulo basali quam 2^{us} multo breviori (3^o sat æquali); unguiculis leviter bifidis. Long., 5 l.; lat., 2½ l.

Near *H. fulvohirtus*, Blackb., but distinguishable as indicated in the tabulation. It also differs by its more strongly emarginate clypeus, its frons much less closely punctulate, its elytra less coarsely and less sparsely punctulate. The claws of this species are not strongly removed from the appendiculate type, but the basal piece is too strongly dentiform at its inner apex to allow of the claws being called appendiculate. If they were regarded as appendiculate the quite strongly subangularly emarginate clypeus would readily distinguish this species from those near which it would fall in the tabulation of Group II.

Western Australia; Nullabor Plains (given to me by Mr. French).

H. rudis, sp. nov. Minus elongatus, postice vix dilatatus; sat nitidus; testaceo-brunneus, pilis fulvis brevibus minus dense vestitus; clypeo confluentem ruguloso, antice in media parte minus perspicue emarginato; labro summo clypei planum nullo modo attingenti; fronte fortiter vix crebre punctulata; fronte clypeoque planum sat æqualem efficientibus; antennis 8-articulatis; prothorace quam longiori ut 19 ad 11 latiori, antice leviter angustato, supra sparsius inæqualiter subgrosse punctulato (puncturis circiter 12 in segmenti longitudine), lateribus leviter arcuatis pone medium (superne visis) subsinuatis, angulis anticis acutis modice productis

posticis (superne visis) acutis sat fortiter retrorsum directis, basi fortiter bisinuata, margine basali sat æqualiter elevato; elytris concinne grosse punctulatis (trans elytron puncturis circiter 17); pygidio leviter sparsim minus fortiter punctulato; coxis posticis quam metasternum sat brevioribus, quam segmentum ventrale 2^{um} paullo longioribus; tibiis anticis extus fortiter tridentatis; tarsorum posticorum articulo basali quam 2^{us} sat breviori quam 3^{us} paullo longiori; unguiculis leviter bifidis. Long., 4 l.; lat., 2½ l.

A very coarsely and sparsely punctured species, in this respect resembling *H. crassus*, Blackb. (Group VI.), but having elytral sculpture still coarser. Its claws resemble those of the preceding species (*H. litigiosus*). If the claws were regarded as appendiculate its coarse, sparse puncturation would readily distinguish this species from those near which it would fall in Group II.

Western Australia; Murchison district.

H. dispar, sp. nov. Modice elongatus, postice parum dilatatus; sat nitidus; brunneus, antennis palpisque dilutioribus, pilis fulvis brevibus minus dense vestitus; clypeo confluentur ruguloso, antice (minus leviter) emarginato; labro summo clypei planum nullo modo attingenti; fronte fortiter nec crebre punctulata; fronte clypeoque planum sat æqualem efficientibus; antennis 8-articulatis; prothorace quam longiori ut 18 ad 11 latiori, antice leviter angustato, supra sparsius sat fortiter punctulato (puncturis circiter 14 in segmenti longitudine), lateribus sat rotundatis pone medium (superne visis) subsinuatis, angulis anticis acutis sat productis posticis (superne visis) vix acutis vix retrorsum directis, basi fortiter bisinuata, margine basali sat æqualiter elevato; elytris confuse (fere subsquamose) minus fortiter punctulatis (trans elytron puncturis circiter 28), puncturis per asperitatem obscuram minus perspicuis; pygidio sparsim nec fortiter punctulato; coxis posticis quam metasternum sat brevioribus, quam segmentum ventrale 2^{um} sat longioribus; tibiis anticis extus fortiter tridentatis; tarsorum posticorum articulo basali quam 2^{us} parum breviori quam 3^{us} sublongiori; unguiculis leviter bifidis. Long., 4 l.; lat., 2 l.

This species, with the preceding two, and *fulvohirtus*, Blackb., and *rubescens*, Blanch., form a small aggregate of species evidently allied naturally *inter se*, but with very good distinctive characters, as indicated in the tabulation. Of the 5, this species and *H. litigiosus*, Blackb., are the two

nearest to each other. They are quite distinct, however, by the prothorax of *H. dispar*, with its sides quite strongly rounded and its hind angles (viewed from above) notably blunter, as well as by the sculpture of the elytra, on which the punctures in *dispar* are indistinct owing to an ill-defined roughness of the derm, so that in parts it is not easy (in the antero-lateral part quite impossible) to pick out the individual punctures, they having quite a blurred appearance. The difference between the puncturation of the pronotum and that of the elytra consequently is very great in *dispar*, the latter appearing close and obscure, in strong contrast to the sparse, well-defined appearance of the former. The claws of *dispar* are much like those of *litigiosus*; if they were to be regarded as appendiculate the clypeus and frons resembling those of *litigiosus* would readily prevent the confusion of the species with any of those in Group II.

South Australia; Eucla.

H. squalidus, sp. nov. Minus elongatus, postice leviter dilatatus; sat nitidus; brunneus, antennis palpisque testaceis; pilis fulvis brevibus minus dense vestitus; clypeo brevi, confluentur ruguloso, antice vix sinuato late truncato-rotundato, labro summo clypei planum haud attingenti; fronte subgrosse sat crebre punctulata; fronte clypeoque planum fere æqualem efficientibus; antennis 8-articulatis; prothorace quam longiori ut 19 ad 11 latiori, antice minus angustato, supra fortiter minus crebre punctulato (puncturis circiter 16 in segmenti longitudine), lateribus arcuatis, angulis anticis acutis minus productis posticis (superne visis) obtusis, basi obsolete bisinuata, margine basali sat æqualiter elevato: elytris subtiliter granulatis, subtiliter sat crebre squamose punctulatis (trans elytron puncturis circiter 30); pygidio sparsius subtilius punctulato; coxis posticis quam metasternum paullo brevioribus quam segmentum ventrale 2^{um} sat longioribus; tibiis anticis extus fortiter tridentatis; tarsorum posticorum articulo basali quam 2^{us} sat breviori, quam 3^{us} sat longiori; unguiculis bifidis. Long., 4 l.; lat., 2 1-10 l.

Easily distinguished from all the species placed before it in the tabulation by the base of its pronotum scarcely sinuate, as well as by the obtuse (though quite distinct) hind angles of that segment. The sculpture of its elytra resembles that of *H. rubescens*, Blanch., but is finer and closer. It differs from *rubescens*, *inter alia*, by the notably closer and stronger puncturation of its pronotum.

Central Australia (Dr. Symonds). The type is in the South Australian Museum.

H. Doddi, sp. nov. Minus elongatus, postice leviter dilatatus; sat nitidus; brunneus, antennis palpisque dilutioribus; pilis fulvis brevibus minus dense vestitus; clypeo confluentem ruguloso, antice (minus leviter) emarginato; labro summo clypei planum nullo modo attingenti; fronte crebre subgrosse punctulata; fronte clypeoque ut plana sat disparia visis (illa leviter convexa); antennis 8-articulatis; prothorace quam longiori ut 7 ad 4 latiori, antice sat fortiter angustato, supra fortiter vix crebre punctulato (puncturis circiter 16 in segmenti longitudine), lateribus sat rotundatis, angulis anticis acutis sat productis posticis (superne visis) obtusis, basi obsolete bisinuata, margine basali æqualiter elevato; elytris subtiliter granulatis, sat subtiliter sat crebre squamose punctulatis (trans elytron puncturis circiter 27); pygidio leviter sparsim punctulato; coxis posticis quam metasternum paullo brevioribus, quam segmentum ventrale 2^{um} sat longioribus; tibiis anticis extus sat fortiter tridentatis; tarsorum posticorum articulo basali quam 2^{us} multo (quam 3^{us} manifeste) breviori; unguiculis bifidis. Long., 3½ l.; lat., 1½ l.

This is a very distinct species, but evidently allied to *H. squalidus*, Black. Apart from its smaller size, it differs from that insect in many respects—notably by the quite strong emargination of the middle of its clypeal outline, and in the much greater anterior narrowing of its prothorax. Its elytral sculpture is a little less fine and less close. The claws of both are unmistakably bifid.

Southern Queensland (Dodd). Given to me by Mr. Griffith.

H. anomalus, sp. nov. Minus elongatus, postice sat fortiter dilatatus; sat nitidus; rufus, capite supra elytris segmentisque ventralibus piceis; pilis brevibus fulvis minus dense vestitus; clypeo fronteque grosse crebre sat rugulose punctulatis, illo antice nullo modo emarginato; labro summo clypei planum nullo modo attingenti; fronte clypeoque ut plana sat disparia visis (illa leviter convexa); antennis 8-articulatis; prothorace quam longiori ut 15 ad 8 latiori, antice mox pone marginem sat fortiter antrorsum angustato, supra sat fortiter sat crebre punctulato (puncturis circiter 22 in segmenti longitudine), lateribus leviter rotundatis, angulis anticis vix acutis leviter productis posticis (superne visis) rotundato-obtusis, basi vix bisinuata; elytris striatis, fortiter sat crebre punctulatis (trans elytron puncturis circiter 24),

interstitiis convexis; pygidio sat fortiter sat crebre subrugulose punctulato; coxis posticis quam metasternum multo brevioribus, quam segmentum ventrale 2^{um} parum longioribus; tibiis anticis extus minus fortiter tridentatis; tarsorum posticorum articulo basali quam 2^{us} parum breviori, 3^o sat æquali; unguiculis bifidis. Long., 4 l.; lat., 2 l.

This species has scarcely the facies of a *Heteronyx*, being of more robust build and brighter colouring than is usual in the genus, but I can find no structural character by which to separate it; its being unique in my collection, however, is a hindrance to the exploration of its characters. It is the only species known to me appertaining to this group and having decidedly striate elytra. The striation, however (as usual when present in *Heteronyces*), is of a special type, not affecting the elytral puncturation, and consisting of the intervals between obscure longitudinal obtuse ridges rather than true striæ. The prothorax has a massive appearance, being scarcely narrowed till close to the front margin, where it becomes *much* narrower suddenly. The labrum projects from the perpendicular front of the clypeus only feebly.

New South Wales; Tamworth district (Musson).

H. labralis, sp. nov. Modice elongatus, postice sat dilatatus; sat nitidus; brunneo-testaceus; pilis brevibus fulvis minus dense vestitus; clypeo fronteque grosse sparsim punctulatis, illo antice truncato sat fortiter reflexo; labro summo a superficie clypei antica perpendiculari haud projecto; fronte clypeoque ut plana multo disparia visis (illa convexa); antennis 8-articulatis; prothorace quam longiori ut 15 ad 8 latiori, antice sat angustato, supra sat crebre vix fortiter punctulato (puncturis circiter 20 in segmenti longitudine), lateribus sat rotundatis, angulis anticis sat acutis sat productis posticis (superne visis) rotundato-obtusis, basi obsolete bisinuata, margine basali fere æqualiter elevato; elytris concinne subtilius punctulatis (trans elytron puncturis circiter 30); pygidio (exempli typici unici) haud observato; coxis posticis quam metasternum multo brevioribus, quam segmentum ventrale 2^{um} vix longioribus; tibiis anticis extus fortiter tridentatis; tarsorum posticorum articulo basali 2^o sat æquali, quam 3^{us} paullo longiori; unguiculis bifidis. Long., 4 l.; lat., 2 l.

The summit of the labrum applied (and I think soldered) to the perpendicular front face of the clypeus easily distinguishes this species. Apart from that character it

would stand in the tabulation beside *Bovilli*, Blackb., from which it differs *inter alia multa* by the much closer puncturation of its dorsal surface. The omission of description of the pygidium is due to that segment being unnaturally drawn up under the elytra in such fashion that it could not be examined without damaging the specimen.

New South Wales; Picton. Given to me by Mr. Griffith.

Before passing to the consideration of Group II. it seems desirable to remark on two or three species described by the earlier authors, which seem to be possibly attributable to this group.

H. spadiceus, Burm. The description of the clypeus does not indicate quite clearly (though I take it to have that meaning) that the clypeus is overtopped by the labrum; if that is the case this species falls into my Group V. or VI., if not, it belongs to this or the second group, in neither of which have I seen any species presenting the characters Burmeister indicates, *viz.*, labrum conspicuous in front of the clypeus, surface entirely grabrous and nitid. Long., 4 l. (from Western Australia).

H. unguiculatus, Burm. This species probably belongs to the present group, although it is not quite clear whether it may not be a member of Group V. In Group I. its front tibiæ with only two distinct external teeth separate it strongly from all the species known to me, except *Tepperi*, Blackb., from which it differs, *inter alia*, by its claws "*tief gespalten*" at the apex.

H. rotundiceps, Blanch., seems to be a member of either this group or Group II., according as its claws (which are not described), are bifid or appendiculate. It appears to be distinguished from all the species known to me of those groups by its being an iridescent insect, and iridescence is so extremely rare in *Heteronyx* that I should not be surprised if the species is wrongly attributed to this genus.

GROUP II.

The known species attributable to this group are even less in number than those of Group I., and they are quite as rare in collections. They seem to fall naturally into a common aggregate with the exception of *H. fortis*, Blackb., *subfortis*, Blackb., and *lilliputanus*, Blackb., the robust subquadrate form and glabrous (or nearly so) subopaque dorsal surface of the former two giving them a somewhat aberrant appearance, and the last named by its diminutive size and other characters having a facies not in the least suggestive of a place among the other species of this group. I regret having

to record here an error in the description of *H. insignis* (Proc. Linn. Soc., N.S.W., 1888, p. 1332), by which its antennæ were said to be 8-jointed, and that (with its other characters) would place it in this group. Its antennæ have 9 joints, and I can account for the mistake only by supposing that after I had examined the antennæ I intended to place it among those with 9-jointed antennæ awaiting description, but by some oversight placed it among those with only 8 joints in their antennæ. It is a member of Group IV.

The following is a tabular statement of some of the distinctive characters of the *Heteronyces* of this group:—

- | | | |
|-----|---|------------------------------|
| A. | Hind angles of prothorax (viewed from above) quite defined (size moderate, 3 l. or more). | |
| B. | Elytra having an apical row of granules bearing stout bristles ... | tristis, <i>Blackb.</i> |
| BB. | Apex of elytra not as B. | |
| C. | Clypeus and frons present a continuous surface. | |
| D. | Head and pronotum uniformly confluent and asperately punctulate | torvus, <i>Blackb.</i> |
| DD. | Pronotum smoothly and not closely punctulate | hispidulus, <i>Blackb.</i> |
| CC. | Clypeus on a plane quite different from that of frons. | |
| D. | Elytra non-striate and uppermost tooth on front tibiæ obsolete | brevicollis, <i>Blackb.</i> |
| DD. | Species not combining the two characters of D. | |
| E. | Apical part of elytra deplanate in front of its membranous border. | |
| F. | Front face of labrum distinctly wider than its distance from summit of clypeus | frontalis, <i>Blackb.</i> |
| FF. | Front face of labrum distinctly narrower than its distance from summit of clypeus | nitidus, <i>Blackb.</i> |
| EE. | Elytra not deplanate in its apical part. | |
| F. | Elytra distinctly substriate. | |
| G. | Elytral puncturation rugulose | fortis, <i>Blackb.</i> |
| GG. | Elytral puncturation smooth | subfortis, <i>Blackb.</i> |
| FF. | Elytra non-striate (the subsutural stria of course excepted) | spretus, <i>Blackb.</i> |
| AA. | Hind angles of prothorax entirely rounded off (size very small, less than 2 l.) | lilliputanus, <i>Blackb.</i> |

H. hispidulus, sp. nov. Minus elongatus, postice leviter dilatatus; sat nitidus; piceus, antennis palpisque rufis; pilis brevibus fulvis minus dense (et supra capillis elongatis erectis nonnullis) vestitus; clypeo confertim ruguloso, antice late rotundato vix sinuato, labro summo clypei planum haud attingenti; fronte crebre sat grosse rugulosa; fronte clypeoque planum sat æqualem efficientibus; antennis 8-articulatis; prothorace quam longiori ut 22 ad 13 latiori, antice sat fortiter angustato, supra sparsius sat fortiter punctulato (puncturis circiter 15 in segmenti longitudine), lateribus pone mediam partem sat fortiter rotundatis, angulis anticis acutis sat productis posticis (superne visis) leviter obtusis, basi leviter bisinuata, margine basali ad latera magis elevato; elytris granulatis, squamose nec crebre punctulatis (trans elytron puncturis circiter 20); pygidio puncturis (his capillas erectas ferentibus) sparsis impresso; coxis posticis quam metasternum sat brevioribus, quam segmentum ventrale 2^{um} sat longioribus; tibiis anticis extus fortiter tridentatis; tarsorum posticorum articulo basali quam 2^{us} sat breviori quam 3^{us} nonnihil longiori; unguiculis appendiculatis. Long., 5½ l.; lat., 2¾ (vix.).

This species is easily identified by the characters indicated in the tabulation.

Western Australia; Coolgardie.

H. subfortis, sp. nov. Minus elongatus, robustus, postice parum dilatatus; minus nitidus; piceus, pedibus rufescentibus, antennis palpisque testaceis; supra sat glaber; clypeo confertim subtilius ruguloso, antice late nec sinuatim rotundato; labro summo clypei planum nullo modo attingenti; fronte crebre subtilius punctulata; fronte clypeoque ut plana valde disparia visis, sutura clypeali subcarinata; antennis 8-articulatis; prothorace quam longiori ut 7 ad 4 latiori, antice sat fortiter angustato, supra subtiliter vix crebre punctulato (puncturis circiter 21 in segmenti longitudine), lateribus sat arcuatis, angulis anticis acutis sat productis posticis (superne visis) sat acute rectis retrorsum leviter directis, basi fortiter bisinuata, margine basali sat æqualiter elevato; elytris concinne sat crebre subtilius nec rugulose punctulatis (trans elytron puncturis circiter 25), striis circiter 4 obsolete impressis; pygidio crebrius subtilius punctulato; coxis posticis quam metasternum sat brevioribus, quam segmentum ventrale 2^{um} sat longioribus; tibiarum anticarum dentibus inferioribus 2 obtusis sat magnis, altera fere carenti; tarsorum posticorum articulo basali quam

2^{us} parum breviori, quam 3^{us} parum longiori; unguiculis appendiculatis. Long., $4\frac{1}{2}$ l.; lat., $2\frac{1}{2}$ l.

This species is a near ally of *H. fortis*, Blackb., differing from it widely, however, by its less opaque surface and by the uppermost external tooth of the front tibiæ scarcely indicated and the surface of its elytra without any rugulosity; in *fortis* the uppermost tooth being acute and quite normally defined and the surface of the elytra quite strongly, though not coarsely, rugulose. Other distinctions will be found by comparing the descriptions of the species. The present insect probably varies in colour.

North South Wales; Mulwala (given to me by Mr. Sloane).

LONGICORNES.

DEMONASSA.

D. capitalis, sp. nov. Elongata; picea, pube ferruginea et alba variegata; illa in capite ad latera et circum oculos, in pronoto maculatum, in elytris basin versus et maculatum pone medium, et in sternis abdomineque maculatum disposita; hac in pronoto ad latera posita, in elytris fasciam latam antemedianam et pone medium maculas multas facienti, metasternum fere totum vestienti, in abdominis lateribus et in tarsi disposita; fronte inter oculos fere parallela vix manifeste punctulata; prothorace fere ut *D. dichotomi*, Newm. (*i.e.*, cristis 2 bifidis discoidalibus et tuberculis parvis multis instructo); elytris basin versus tuberculis multis instructis (e his tuberculo quam ceteri majore mox pone basin inter suturam humerumque mediano sat elevato), ante medium grosse sparsim punctulatis (puncturis inter pubem nigris apparentibus), mox pone medium subtilius punctulatis, in parte tertia apicali fere lævibus, ad apicem fortiter bispinosis, in parte postica dimidia costa lata obtusa longitudinali lævi instructis; antennis (exempli typici) quam corpus sat longioribus pube ferruginea et alba plus minusve vestitis, subtus ciliatis. Long., 12 l.; lat., 4 l.

Resembles *D. dichotoma*, Newm. Apart from the distinct colouring and pattern of its pubescence it differs from that species, *inter alia*, by its forehead nearly parallel-sided between the eyes, by the principal tubercle of the elytra being very much smaller and placed much closer to the base, by the puncturation of the front half of the elytra much coarser and less close, by the hind part of the elytra almost punctureless, and by the apex of its elytra strongly bispinose.

North Queensland (Cairns); sent by Mr. French.